WHAT IS CLAIMED IS:

1. A process for the production of propylene from an olefin-rich feedstock containing at least one olefin of C_4 or greater, the process comprising contacting the olefinic feedstock with a catalyst of the MFI-type having a silicon/aluminum atomic ratio of at least about 180 to produce an effluent containing propylene, the propylene yield on an olefin basis being from 30 to 50% based on the olefinic content of the feedstock.

2. A process according to claim 1, wherein the feedstock comprises a light cracked naphtha.

3. A process according to claim 1, wherein the feedstock is selected from the group consisting of a C_4 cut from a fluidised-bed catalytic cracking unit in a refinery, a C_4 cut from a unit in a refinery for producing methyl tert-butyl ether, and a C_4 cut from a steam-cracking unit.

4. A process according to claim 1, wherein the feedstock is selected from the group consisting of a C_5 cut from a steam cracker and light cracked naphtha.

5. A process according claim 1, wherein at least 95wt% of any C_3 compounds in the effluent are present as propylene.

6. A process according to claim 1, wherein the feedstock contacts the catalyst at an inlet temperature of from 500 to 600°C.

7. A process according to claim 6, wherein the inlet temperature is from 540 to 580°C.

8. A process according to claim 1, wherein the feedstock contacts the catalyst at an olefin partial pressure of from 0.1 to 2 bar.

9. A process according to claim 1, wherein the feedstock is passed over the catalyst at an LHSV of from 10 to $30h^{-1}$.

10. A process according to claim 1, wherein the silicon/aluminum atomic ratio is from 180 to 1000.

11. A process according to claim 1, wherein the catalyst has been pretreated by heating the catalyst in steam and de-aluminating the catalyst by treating the catalyst with a complexing agent for aluminum, the pretreatment increasing the silicon/aluminum atomic ratio of the catalyst to a value at least about 180.

12. A process according to claim 1, wherein the catalyst of the MFI-type is of the silicalite type.

13. A process according to claim 1, wherein the catalyst of the MFI-type is of the ZSM-5 type.

14. A process according to claim 1, wherein the catalyst is of the ZSM-5 type and has been prepared by crystallisation using an organic template and has been unsubjected to any subsequent process selected from the group consisting of steaming and de-alumination, the catalyst having a silicon/aluminum atomic ratio of from 300 to 1000.